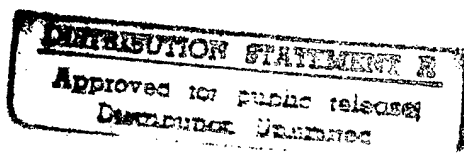


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December 1986

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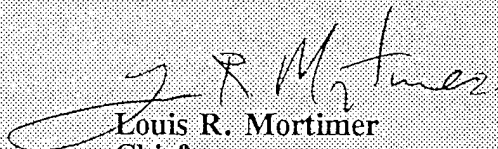
*Peter R. Blood
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REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave Blank)		2. REPORT DATE <i>Dec 1986</i>	3. REPORT TYPE AND DATES COVERED Final	
4. TITLE AND SUBTITLE A Selective, Annotated Bibliography on Current South Asian Issues			5. FUNDING NUMBERS	
6. AUTHOR(S) Peter Blood James Heitzman Robert Levy Russell Ross Elizabeth Curtiss Barbara LePoer Douglas Makeig				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Federal Research Division Library of Congress Washington, DC 20540-4840			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES Prepared under an Interagency Agreement				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This bibliography provides selective annotations of open-source material on two current issues: nuclear developments in South Asia, and tactics and organization of Afghan resistance groups. The monthly bibliography incorporates serials and monographs arranged alphabetically by author and title within each section.				
14. SUBJECT TERMS South Asia Insurgencies Afghanistan Nuclear proliferation			15. NUMBER OF PAGES <i>17</i>	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT SAR	

PREFACE

This bibliography provides selective annotations of open-source material on two current issues:

- nuclear developments in South Asia, and
- tactics and organization of the Afghan resistance

The bibliography incorporates serials and monographs received in the previous month and is part of a continuing series on the above subjects.

Entries within each topic are arranged alphabetically by author or title. Call numbers for materials available in the Library of Congress are included to facilitate recovery of works cited.

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1. NUCLEAR DEVELOPMENTS IN SOUTH ASIA

GLOSSARY OF TERMS

AEMC	The Atomic Energy Minerals Center at Lahore is responsible for finding and recovering uranium ore, thereby filling a vital need stemming from boycotts of Pakistan by international nuclear fuel suppliers.
BARC	Bhabha Atomic Research Centre is located in north Bombay and is India's facility for research in and development of nuclear technology.
CHASHNUPP	Pakistan's Chashma Nuclear Power Plant, a projected 900-megawatt facility in Mianwali District, Punjab, was sanctioned in 1982 in order to create electrical power through light-water technology.
Cirus	A Candu-type Canadian-built plant located at BARC, Cirus was commissioned in 1960. India reprocessed spent fuel from Cirus to make the plutonium for its 1974 "peaceful nuclear explosion;" Cirus has a capacity of 40 megawatts.
Dhruva	One of the world's few high-flux reactors, Dhruva, which went critical in August 1985, is solely the product of Indian research and production, and therefore, falls completely outside IAEA safeguards. Dhruva shares facilities with Cirus, its neighbor in the BARC, has a 100-megawatt capacity, and can produce 30 kg of plutonium annually.
IAEA	International Atomic Energy Agency (United Nations)
Kalpakkam	This Tamil Nadu town is the site of the Indira Gandhi Atomic Research Center (formerly MAPP) and gives its name to a 40-megawatt fast-breeder reactor which went critical in August 1985 using plutonium-uranium carbide fuel.

KANUPP	Karachi Nuclear Power Plant, a 125-megawatt reactor, was supplied by Canada on a turnkey basis and became operational in 1972.
MAPP-1	Madras Atomic Power Project's first Candu-type 235-megawatt unit was commissioned in January 1984. The center is located at Kalpakkam, Tamil Nadu, and was produced completely by Indian research and technology; consequently, its units and the plutonium they produce fall outside IAEA inspection safeguards. MAPP units are intended to provide electricity for Madras. In October 1985, MAPP was renamed the Indira Gandhi Atomic Research Center, but new names for individual plants have not been made public.
MAPP-2	The second unit at Madras Atomic Power Project is also a Candu-type 235-megawatt plutonium and heavy-water reactor. MAPP-2 went critical in August 1985 and was commissioned in October of the same year.
NPT	The Nuclear Nonproliferation Treaty was ratified by the UN General Assembly in 1968. India and Pakistan contend that the NPT discriminates against nonnuclear states, but Pakistan has repeatedly offered to sign if India will do so simultaneously. In the UNGA, Islamabad voted in favor of the NPT.
PAEC	Pakistan Atomic Energy Commission
PINSTECH	Pakistan Institute of Nuclear Science Technology, the site of a US-supplied 5-megawatt "swimming pool"-type reactor installed in the 1960s
Tarapur	The Tarapur nuclear power plant, located near Bombay, was built by the United States. It has a capacity of 600 megawatts and can annually produce 50 to 80 kg of plutonium. Tarapur and its products come under IAEA inspection safeguards.

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"Bangladesh Brings Triga Mark II Reactor to Full Power." Nucleonics Week (New York), Vol. 27, No. 43, 23 October 1986, p. 14.

General Atomic Technologies reports that Bangladesh's Savar research reactor, a Triga Mark II, went critical on September 14 and reached full power on October 1.

"BARC Developing Thorium Fuel for Nuclear Reactors." Hindu (Madras), 26 August 1986, p. 11. In JPRS-TND-86-023, 22 October 1986, p. 25.

Recent research in the use of thorium in fusion-fission hybrid reactors may provide a relatively rapid and safe way for India to meet its energy needs into the 21st century. Working at a Swiss nuclear accelerator in Lausanne, Indian scientists from BARC have succeeded in transforming thorium into uranium-233 through a process of neutron irradiation. In a few years, scientists hope to produce the same transformation on a much larger scale with the use of thermo-nuclear fusion plants. Such a fusion breeder could be combined with India's conventional fission reactors to produce electricity relying on the nation's abundant supply of thorium, and producing much less nuclear waste than current reactors.

Until recently, India's long-term nuclear strategy has depended on the development of fast breeder reactors which require 30 years to produce sufficient fuel to power additional reactors. With the use of hybrid reactors and the thorium-uranium cycle, India could produce additional nuclear fuel much more cheaply and quickly, with a single fusion plant providing enough uranium-233 for 40 Rajasthan-type reactors.

"Bhabha Center Plans to Build Atom-Smashers Told." Times of India (Bombay), 28 August 1986, p. 7. In JPRS-TND-86-023, 22 October 1986, p. 27.

BARC announces plans to equip the upcoming nuclear complex at Indore with a 1000 million volt (MEV) proton synchrotron and an electron accelerator. The synchrotron

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will be used to study "condensed matter and futuristic energy generation options," while the accelerator will serve as a source of synchrotron radiation as well as for research in solid state physics and molecular biology. The facilities at Indore will be made available to university-based and other researchers throughout India.

"Pak Bid to Buy N-Trigger Foiled." Indian Express (Bombay), 30 October 86, p. 1.

Pakistan's unsuccessful efforts to buy a 450 KV X-ray flash machine and associated high-speed camera have raised suspicion and anger in the United States and Western Europe. A Pakistan Embassy spokesman in London claims that the Pakistan Ordnance Factory in Wah was seeking the X-ray flash for the testing and calibration of artillery guns. Nonetheless, the flash can also be used in the design of the high-explosive trigger of an atomic bomb, and therefore the British Government has stepped in to block the proposed sale. The US Government similarly intervened last year when the Pakistan Army Artillery School tried to buy an X-ray flash from Hewlett Packard.

Pakistan may now attempt to make the purchase from Scandiflash in Sweden. The Swedish authorities permitted the sale of similar equipment to Israel, but are keeping the possibility of a Pakistani purchase under review.

"Provisions of Nuclear Agreement with PRC Outlined." Pakistan Times (Lahore), 19 September 1986, p. 3. In JPRS-TND-86-023, 22 October 1986, pp. 31-32.

A spokesman for the Pakistan Ministry of Foreign Affairs gives details of the first formal nuclear agreement between Pakistan and the PRC. The agreement will entail cooperation in the following areas: production of radio isotopes and their use in industry; application of radiation technology in agriculture; cooperation in nuclear medicine and radio therapy; exploration and exploitation of nuclear minerals, and design, construction and operation of nuclear reactors for research and power.

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The agreement provides for scientific exchanges, seminars, training and the supply of materials and equipment. The agreement also specifies that all transfers will be conducted under the safeguards of the IAEA.

Qayyum, Abdul. "The Indian Nuclear Threat - Its Nature, Magnitude and Limitations." Pakistan Army Journal (Rawalpindi), Vol. XXVIII, No. 2, June 1986, pp. 37-44.

The author, a Brigadier in the Pakistan Army, uses information from the 1980-81 Annual Report of the Indian Department of Atomic Energy to assess the capability of the Indian nuclear program, both in energy production and potential military uses.

Energy: Qayyum provides a run-down of the power reactors currently in operation or under construction (as of 1981) : Tarapur (2 reactors, 380 MW), Rajasthan Atomic Power Project (2 reactors, 200 MW & 220 MW), Narora Atomic Power Project (2 reactors, 235 MW each). In addition, he claims that India's long-term nuclear projects from 1980 to 2010 include the following:

- 1985: indigenous construction of CANDU's, Light Water Reactors, Liquid Metal Fast Breeder Reactors; Hydrogen bomb capacity.
- 1990: use of Thorium fuel cycle
- 2000: extensive use of Thorium-Uranium conversion
- 2010: operation of fusion-fission hybrid reactor fuel factories

Military Uses: Although India already has the capability to produce small tactical weapons, Qayyum estimates that it will be several years before it can make high-yield nuclear weapons that could serve as a nuclear deterrent. He concludes that Pakistan should respond to the Indian threat by continuing both its dialogue with India and its willingness to expose India's "hostile designs."

Reddy, G.K. "Moscow Package On N-Power Plant." Hindu (Madras), 26 October 1986, p. 1.

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A Soviet offer of a 1000 MW nuclear power plant has met with a divided response among Indian officials. Those who support the plant cite the nation's critical power shortage together with Moscow's attractive financial package that would cover both equipment and construction costs. In addition, the Soviets have offered to build a hydro-electric plant in the Tehri-Garwal region of Uttar Pradesh.

Opponents of the plant are concerned that India will not have an assured supply of the enriched uranium which the Soviet plant requires. The rest of the nation's atomic reactors operate on natural uranium, and India does not have its own enrichment facilities. Although the Soviet Union has agreed to supply the necessary fuel, Indian officials are reluctant to make their nuclear program dependent on a foreign supplier. Critics cite the experience of the American-built Tarapur plant and the subsequent cut-off of enriched uranium supplies from the U.S.

Singh, Jasjit. "Pakistan's Bomb: The Woodward Story." Indian Express (Bombay), 10 November 1986, p. 8.

Air Commodore Jasjit Singh reviews the evidence for Pakistan's nuclear capability as presented in Bob Woodward's article in the Washington Post ("Pakistan Reported Near Atom Arms Production", 4 November 1986, p. A1). In particular, Singh discusses American intelligence reports that Pakistan has enriched uranium to a level of 93.5% and that in late September it engaged in a second test of a nuclear trigger mechanism.

Beyond these reports, Singh cites further evidence to suggest that Pakistan has succeeded in developing an implosion-type bomb, including Pakistan's own claim of having enriched uranium beyond 90%, and its widely publicized efforts to purchase an X-ray flash.

Despite the fact that these developments are in violation of previous aid agreements with the United States, Singh claims, the United States will permit continued arms shipments in order to increase Pakistan's military

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dependence, while forcing India to rely increasingly on the moderating influence of the United States in Islamabad.

The author concludes that unless recent reports turn out to be false, India will be pushed over the nuclear threshold.

"Thal Heavy Water Plant Begins Production." Hindu (Madras), 30 October 1986, p. 7.

The Thal Heavy Water Plant in Maharashtra went into production on October 28 at 1:00 p.m. Started in February 1982, the plant began enrichment on October 15 of this year. At full capacity, it consumes 2,700 tons of ammonia per day and has a rated capacity of 110 tons of heavy water per year.

"Troubles With Nuclear Power Program Reviewed." Telegraph (Calcutta), 31 August 1986, p. 9. In JPRS-TND-86-023, 22 October 1986, pp. 21-22.

Numerous setbacks at India's three functioning nuclear power stations are threatening the nation's stated goal of 10,000 MW of nuclear power by the year 2000:

1) Rajasthan Atomic Power Station (Raps): Raps-1 has virtually shut down, and is unlikely to return to operation. (Raps-2 was relatively successful over 1985, with total output of 1098 million units, at 57% capacity and 71% availability.)

2) Tarapur Atomic Power Station (Taps): Taps-1 has encountered repeated problems, operating in 1985 at 62% capacity and 71% availability (compared to Taps-2 figures of 84% and 92% respectively). The two units together have completed 16 years of operation, with total power output of more than 30,000 million units of power.

3) Madras Atomic Power Station (Maps): In 1985, Maps-1 operated at 46% capacity and 55% availability, with a

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total generation of only 946 million units. In addition, the unit was forced to shut down twice because of vibrations in the turbine generator.

In addition to these technical problems, the government has encountered unexpected delays in the planning and construction of several new power stations, including the the Narora Atomic Power Station in Uttar Pradesh and the Kaiga project in Karnataka.

In order to meet its nuclear goal of 10,000 MW by the year 2000, India will have to make some qualitative changes in its nuclear power program. The most immediate change will be the introduction of 500 MW generators. In the more distant future, Indian scientists are hoping to make use of fast breeder reactors, which can extract 70 times the amount of energy from the same quantity of uranium.

2. TACTICS AND ORGANIZATION OF THE AFGHAN RESISTANCE

GLOSSARY OF TERMS

- Commander A resistance fighter who is recognized as a military leader in local or regional areas of conflict; some commanders are respected outside their own regions, but there is not yet a coordinated, nationwide, insurgent command in Afghanistan. The title commander is the only honorific or rank recognized by the resistance movement.
- Dushmani (singular: dushman) Soviet pejorative term for Afghan insurgents; it means "bandit" and originated during the 1930s Central Asia resistance.
- DRA The Democratic Republic of Afghanistan was established as the result of a coup led by Mohammad Nur Taraki and Hafizullah Amin in April 1978. Deteriorating internal security led to military intervention by the Soviet Union in December 1979 and Amin was killed by the invading troops. The Soviet invasion transformed armed resistance toward the modernistic but arbitrary reforms of Taraki and Amin into a war of national liberation.
- KHAD DRA intelligence service whose operations are entirely directed by its many Soviet KGB advisors. The acronym stands for Khedmat-Etala'at-e-Daulati (State Information Service). KHAD received ministerial rank in January 1986.
- Mujahideen (singular: mujahid) This Islamic term means "holy warrior," but it is most often used as a name for Afghanistan's resistance fighters, who consider their campaign a jihad (holy war) to drive unbelievers from their country.
- Spetznaz Soviet special warfare troops under the GRU (Military Intelligence Directorate) of the Soviet Ministry of Defense. These highly mobile units are deployed throughout Afghanistan for operations which require more skill or loyalty than is commonly displayed by Soviet or DRA troops.

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"Afghan Rebels Claim Downing of Transport Plane." Washington Post, 2 December 1986, p. A22.

A transport plane carrying at least 25 Soviet and DRA troops was shot down east of Kabul by fighters of the Yunis Khalis guerrilla group. The passengers, enroute to Jalalabad, were all killed.

"Afghan Tribal Leader Named Acting President." New York Times, 24 November 1986, p. A5.

Haji Mohammad Chamkani, a little known tribal leader from Paktia Province and previously one of the seven vice-presidents of the Revolutionary Council, has been named acting president. Chamkani replaces Babrak Karmal in the largely ceremonial post. He has been described by a DRA official publication as a non-Communist.

Berlin, Michael J. "U.N. Urges Afghan Pullout" Washington Post, 6 November 1986, p. A25.

The General Assembly of the United Nations adopted by the overwhelming margin of 122 to 20, its eighth annual Pakistani-sponsored resolution, calling for a Soviet troop withdrawal and a negotiated solution to the war in Afghanistan. The vote indicates that the Soviet Union's gesture of a limited troop withdrawal has failed to blunt strong world opposition to its Afghan adventure. The tally, pro and con, on the resolution was the same as last year with the exception that two African countries, Guinea-Bissau and Sao Tome, shifted to the Pakistani camp while 2 others, Uganda and Burkino Faso, now side with the Soviets. All four shifts in allegiance are thought to have resulted from economic/military rather than ideological considerations.

Dhombres, Dominique. "M. Karmal, Ancien Numero Un de Kaboul a Ravi la Vedette à Son Successeur." Le Monde (Paris), 21 October 1986, p. 6.

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With carefully staged fanfare, the third Soviet regiment (anti-aircraft defense) scheduled to leave Afghanistan, paraded through Kabul on 19 October. To ensure that the occasion went without incident, Khad agents were posted every 20 meters. The author felt that the pro-Soviet acclamations voiced by the many high school students brought in to witness the event, were carefully orchestrated. Mistaken for Soviets, the author and his fellow journalists had DRA and Soviet flags waved at them and many students called out "thank you comrades!" When the author's driver informed the crowd of the journalists' identity, the students' enthusiasm collapsed and their charade promptly ended. The author noted that Babrak Karmal, recently stripped of his power, seemed to have many admirers, and was at one point literally swept away by the crowd--a sharp contrast to the isolation surrounding his successor, Najibullah--who was left unattended except for a few functionaries.

Dhombres, Dominique. "USSR Likely to Remain in Afghanistan." Manchester Guardian (Manchester), 23 November 1986, p. 11,14.

From his vantage point on a hill overlooking Kabul, the author looks down upon a forest of flagpoles, foliaged with red and green flags. Each flag commemorates a fallen DRA soldier, red if the deceased had been a member of the Communist Party, otherwise in Islamic green. Only one grave stands out by its ornateness--that of a general who blew himself up to avoid being captured by the mujahideen--and who was posthumously made a "Hero of Afghanistan." The author reflects on the irony that another monument to the dead is now being given care and attention by the regime--the tomb of Nadir Shah--father of Zahir Shah, Afghanistan's last king who was deposed in 1973. A rumor perhaps, but one with widespread circulation, is that the Afghan government, in its desperation to gain legitimacy, made secret overtures to Zahir to participate in a "political solution" to the war in the hope that he would return and assume a figurehead role as leader of the country. Zahir, the rumor goes, asked as a prerequisite that his father's tomb, ransacked in 1978, be restored. The author believes that the

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monarchist solution is not imminent but the fact that it is being discussed within the PDPA accurately reflects the current mood in Kabul--an admission, in essence, of defeat and failure after more than 8 years of Communist rule. The author cautions that if implemented, the king's restoration would simply be another "Gorbachevean maneuver," similiar in genre to the much publicized troop withdrawal, and would in no way imply a premature Soviet departure from Afghanistan.

"Report Cites Atrocities In War in Afghanistan." New York Times, 12 November 1986, p. A8.

The most recent United Nations human rights report on Afghanistan, made public on 11 November 1986, states that "the continuation of the military solution to the war will lead to a situation approaching genocide." The report cites widespread atrocities committed by Soviets and DRA troops including torture (pulling out of fingernails, systematic beatings, humiliating conditions for prisoners, and the kicking to death of villagers) and bombings (geared toward the leveling of villages and toward the terrorization of children through explosive toys). The report will be considered by the General Assembly this fall.

Rosen, Jane. "Afghan Punch-up at UN." Guardian (Manchester), 8 November 1986, p. 6.

DRA 'diplomats' assigned to the United Nations jumped members of the resistance invited to press conference. The diplomats ambushed the guerrilla leaders outside the entrance to the the UN Correspondents Association and pounced "kicking, punching, and screaming" on their quarry. The guerrilla leaders fought back but were separated from their assailants by security guards. Later, at the conference, one of the delegates said, "the force which was used by the agents of the puppet regime is not a displeasure but a matter of honor to us. If not for the UN Charter I would have given them a good lesson."

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Rupert, James. "Afghan Leader Resigns Presidency, Party Post."
Washington Post, 21 November 1986, p. A31.

On 20 November, Babrak Karmal resigned from his offices of president and member of the Communist Party Politburo. Karmal's resignation was announced for health considerations, the same reason given earlier in May when he resigned from the top general secretary position. While no replacement for president has yet been named, Karmal's place on the Politburo was given to Lt. General Ghulam Faruq Yagubi, a protege of Najibullah. Analysts believe that the Soviets had come to the conclusion that Karmal could not rid himself of the stigma of having been installed in power in the wake of the Soviet invasion, and that to gain more popular support, it would be necessary to find a replacement. So far, however, Karmal's successor, Lt. Gen. Najibullah, seems no more likely to significantly broaden the DRA's base of support. Furthermore, Najib has to contend with the pro-Karmal factions of the ruling party. Numerous reports tell of conflicts, including gunfights, which have occurred between pro-Karmal and pro-Najibullah factions.